

THE INVENTION CLAIMED IS

1. A payment card, comprising:

5 a user-sensor for accepting a user input;
 a processor connected to the user-sensor and providing
for user authentication;
 a contact interface connected to the processor and
providing for communication with a contact-type smartcard reader;
10 a wireless interface connected to the processor and
providing for communication with a contactless-type smartcard
reader;
 a stripe of magnetic material having a longitudinal
length, and a front side and a back side, and able to store
15 electronic data as a magnetic recording comprising a plurality of
bits;
 a magnetic write head permanently positioned on said
back side of the stripe at a particular data bit of one of said
plurality of bits, and providing for electronic-magnetic
20 alteration of a data bit magnetically readable on said front
side;
 a magnetic recording serially accessible to a
longitudinally moving read head on said front side of the stripe
that includes said data bit affected by the magnetic write head;
25 and
 a plastic card in which all the other elements are
disposed.

2. The payment card of claim 1, wherein:

30 the user-sensor includes a keypad for user entry of a
password.

3. The payment card of claim 1, wherein:
the user-sensor includes a biometric sensor for
collecting a physical characteristic of the user.

5 4. The payment card of claim 1, wherein:
the user-sensor includes a biometric sensor for
collecting at least one of a signature or a fingerprint of the
user and such is used by the processor to authenticate the user.

10 5. The payment card of claim 1, wherein:
the processor includes a secure dual-interface
smartcard integrated circuit.

15 6. The payment card of claim 1, wherein:
the processor includes a programmable interface
controller (PIC) connected to a contact interface of a secure
dual-interface smartcard integrated circuit.

20 7. The payment card of claim 6, wherein:
the PIC does not store more than one digit of a user
password being entered before sending it on to said contact
interface of said secure dual-interface smartcard integrated
circuit.

25 8. The payment card of claim 6, wherein:
the PIC does not store a whole user password entered
one digit at a time.

30 9. The payment card of claim 1, further comprising:
a financial account number of a user encoded within the
magnetic recording; and

a controller connected to the magnetic write head and providing for a subsequent obfuscation of the financial account number by re-recording of said data bit.

5 10. The payment card of claim 1, further comprising:
 a usage-counter record encoded within the magnetic
recording; and
 a controller connected to the magnetic write head and
providing for a subsequent incrementing of the usage-counter
10 record by re-recording said data bit.

 11. The payment card of claim 10, further comprising:
 detectors connected to signal the controller when a
reading of data in the magnetic recording has occurred.

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 12. The payment card of claim 1, further comprising:
 a piezoelectric generator connected to power the
processor.

20 13. The payment card of claim 1, further comprising:
 a piezoelectric generator connected to charge a battery
that powers the processor.

 14. A method for operating a payment card, comprising:
25 providing a programmable magnetic array on a payment
card; and
 presenting valid data to said magnetic array for a
limited time.

15. A method for operating a payment card, comprising:
providing a smartcard contact interface, a wireless
smartcard contactless interface, and a programmable magnetic
array on a single payment card; and
5 presenting valid data to said magnetic array for a
limited time.

16. A method for operating a payment card, comprising:
providing a smartcard contact interface, a wireless
10 smartcard contactless interface, and a programmable magnetic
array on a single payment card;
requiring a user to enter a password on said single
payment card; and
presenting valid data to said magnetic array for a
15 limited time if the user is authenticated.

17. A method for operating a payment card, comprising:
providing a smartcard contact interface, a wireless
smartcard contactless interface, and a programmable magnetic
20 array on a single payment card;
requiring a user to enter a biometric on said single
payment card; and
presenting valid user account data to a corresponding
card reader for a limited time if the user is authenticated.

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18. A method for a transaction process, comprising:
embedding an algorithm that encodes unique user data in
a cryptoprocessor;
requesting a new unique transaction encoding to be
30 issued by using said cryptoprocessor to process said algorithm
and to generate a data suited to a card-acceptance system pre-
processing requirements; and

using a conventional transaction infrastructure and server to derive from said number said unique user data.

19. The method of Claim 18, further comprising:

5 communicating said new unique transaction encoding to said conventional transaction infrastructure and server by a smart card contact or proximity connection.

20. The method of Claim 18, further comprising:

10 communicating said new unique transaction encoding to said conventional transaction infrastructure and server by a reprogrammable magnetic stripe on a card read by a reader.